Wildlife and Vegetation Environmental Compliance Monitoring

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What and Why do we Monitor?

- Riparian Vegetation Quantity and Quality
- Riparian Bird Population Trends
- Foothill Yellow-legged Frogs and Western Pond Turtle distribution
- Largely driven by the California Environmental Quality Act- impacts to sensitive species and habitats must be quantified and mitigated
- Environmental compliance obligations are also aligned with TRRP Ecological Objectives

Riparian Vegetation

Riparian Vegetation

- California has a no net loss policy regarding wetland and riparian habitats
- Vegetation is a measure of riparian habitat quality
- Compliance goal is 1:1 replacement of selected vegetation classes within ten years of impact
- Mapping and assessments point to full compliance with State policy, although it is a close one

Wheel Gulch Summary

Revegetation Survival and Composition Information in 2013			
Planted Riparian Vegetation	**Survival Summary:** 116 surviving pods 418 plantings survived	**Pods Planted*** 118 Total pods: 42 Mixed willow pods 76 Cottonwood pods	**Individual Planted** 708 Total plantings: 42 Arroyo willows 346 Cottonwoods 160 Shining willows 160 Red willows
Survival Information	**Number of Individuals/Percent Surviving**	**Ave/Max Height (m)**	**Health/Vigor (0-5)**
Arroyo Willow	7 / 17%	1.0 / 3.0	3
Cottonwood	287 / 83%	1.5 / 3.0	3
Shining Willow	78 / 48%	1.0 / 2.0	3
Red Willow	46 / 29%	1.5 / 2.5	3
Pod survival (at least one planting alive in pod)		116 of 118	98.3%
Pod survival (at least half of plantings alive in pod)			
Pod survival (all plantings alive in pod)			
Planting survival			

Notes:

- upland plantings are struggling
- *Some inaccuracies in pod identification were obs inaccuracies are the same as those presented in the
- Survival rate of red willows is low, being 29% surv
- Arroyo willow survival is poor at 17% of individu
- The density of sweet clover which dominated the a experienced during the 2012 survey.
- Shining willow showing signs of browse, but brow
- Strong areas of cottonwood regeneration from
- Upland plantings were not assessed in 2013; a gene few individuals.
- Upland plantings appear to be struggling due to soi temperatures during the summer months. Areas cl plantings appeared to have higher number of survi
- Clump planting appear to be surviving okay specif woody species were present in most all of the plant

RIPARIAN MITIGATION AND MONITORING PLAN FOR THE TRINITY RIVER RESTORATION PROGRAM

Prepared for:

THE NORTH COAST REGIONAL WATER QUALITY CONTROL BOARD
THE CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE
And
THE U.S. ARMY CORPS OF ENGINEERS

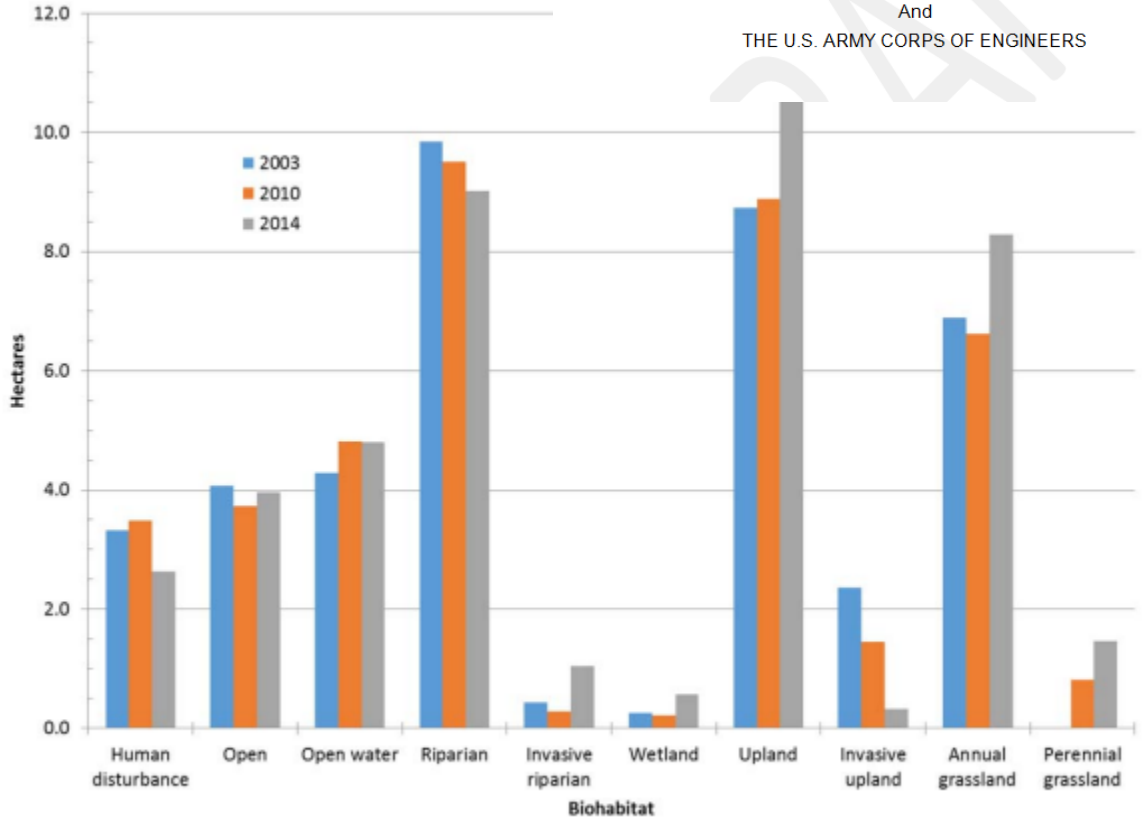


Figure 18. Biohabitats mapped in 2003, 2010, and 2014 at 18 constructed and 8 pre-construction channel rehabilitation sites.

Herpetological Monitoring

Herpetological Monitoring

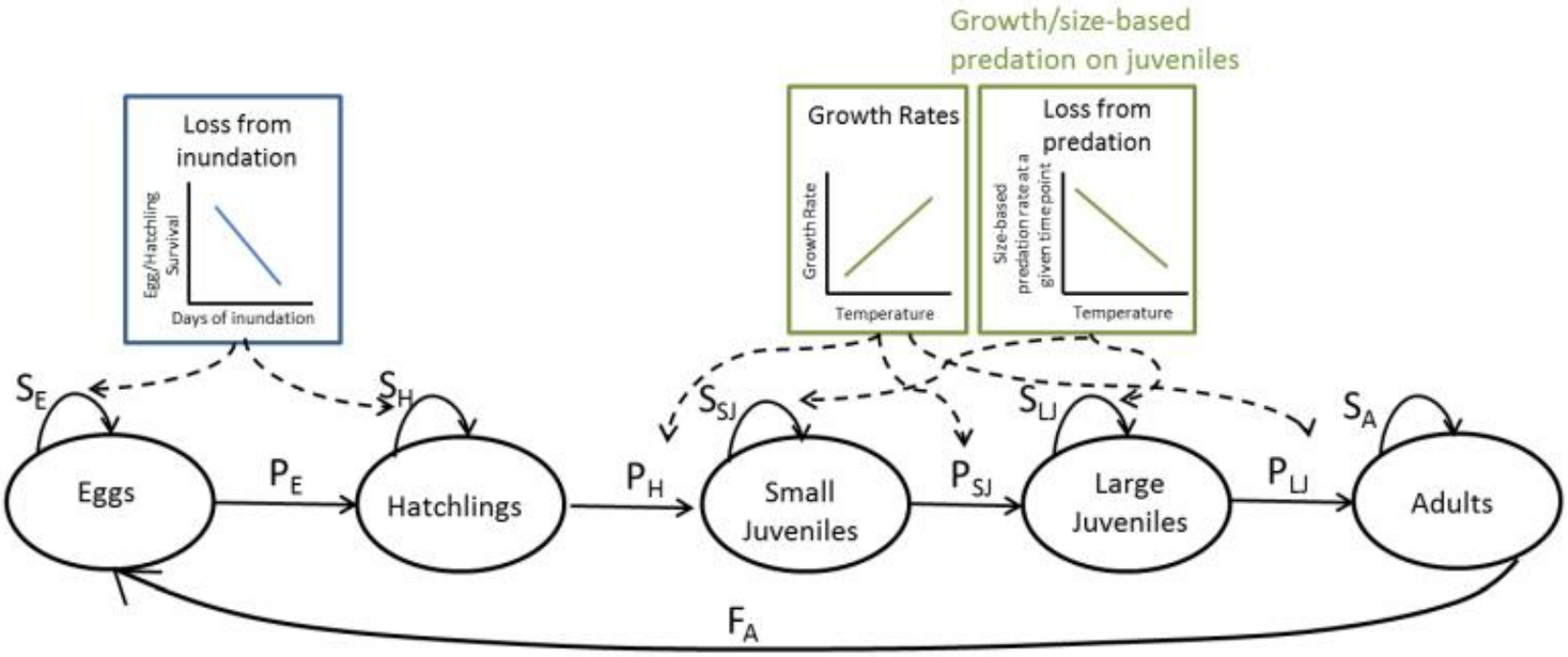
- Foothill Yellow-legged Frogs and Western Pond turtles are special-status aquatic species
- Flow regulation and channel rehabilitation activities have the potential to affect these species

Herpetological Monitoring

- A USGS effort to model the distribution of these species in the Trinity River is underway
- FY 2015 is the final year of the 3-year occupancy modeling study
- Future monitoring will be built around this model and will also focus on evaluating the risk of scour and desiccation to FYLF egg masses

Impacts related to water management decisions

Water temperature impacts



Potential impacts from channel rehabilitation

- Improved/increased nesting habitat
- Pond structures adjacent to main channel could provide warmer water temperatures and opportunities for increased growth rates

Avian Monitoring

- **The Trinity River provides unique and exceptional habitats for riparian and riverine birds**
- **Birds are long-term, high-level indicators of ecosystem health**
- **Twenty-four species are monitored, with five focal riparian species: Black-headed grosbeak, song sparrow, tree swallow, yellow-breasted chat, and yellow warbler**
- **Trends since 2002 indicate healthy avian populations**

Trends in Riparian and Riverine Bird Populations along the Trinity River, 2002-2014

Sarah M. Rockwell and Jaime L. Stephens
Klamath Bird Observatory
Rep. No. KBO-2015-0003

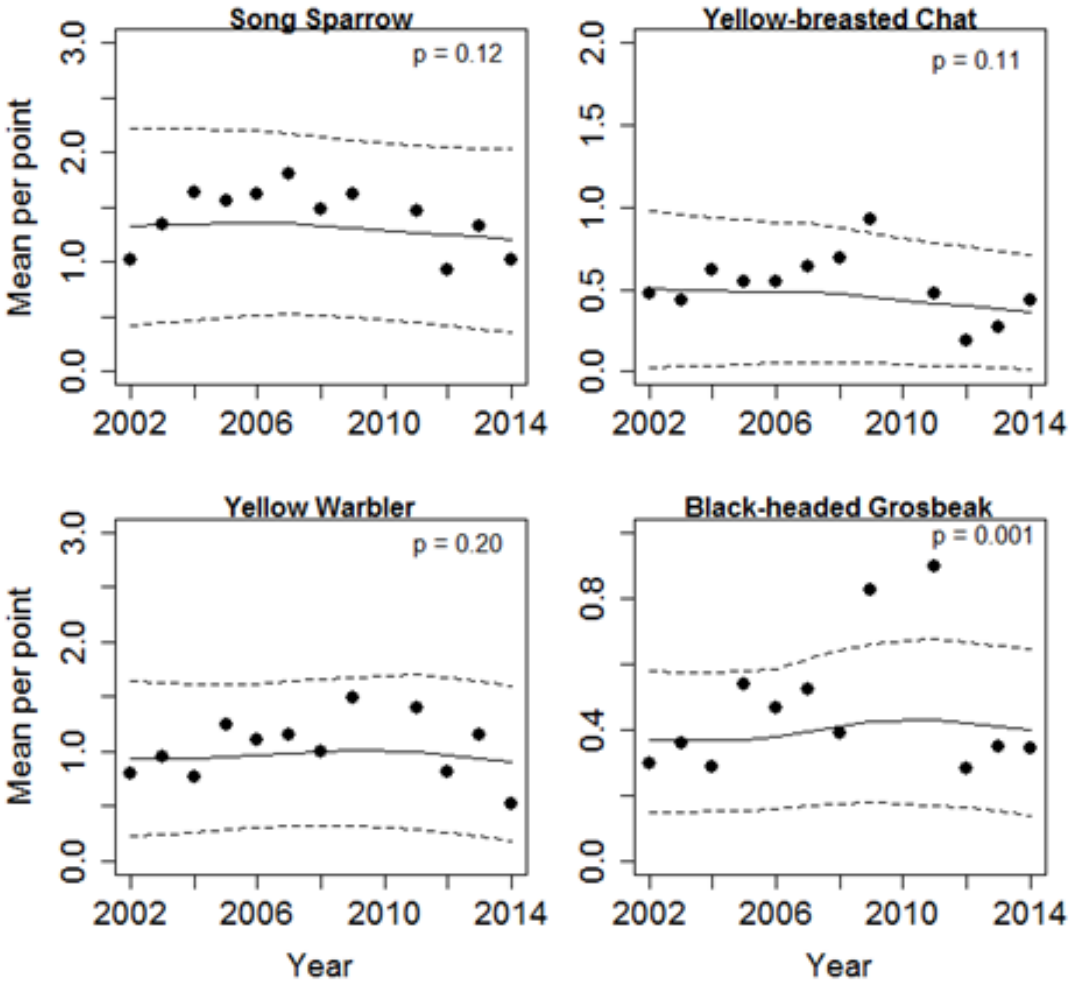


Figure 2. Breeding season abundance trends for 16 riparian bird species along the Trinity River mainstem. Data points displayed are the mean number of individuals counted per point from all survey points within a year. Fitted lines, 95% confidence intervals, and significance are from quasipoisson GLMs with Year, Julian Day, and Point ID as explanatory variables.

Questions?

Lower Steiner Flat, Fall 2013
Planted Summer 2012